AP/GP 2712 #18 ELH

PATENT
1259-0191P

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of		Before the Board of Appeals	
Kouki HATAKEYAMA		Appeal No.:	
Appl. No.:	08/841,318	Group:	2712
Filed:	April 30, 1997	Examiner:	A. HARRINGTON

For: A METHOD OF CONTROLLING THE DISPLAY MODE AND THE RECORDING MODE OF AN ELECTRONIC STILL CAMERA (AS AMENDED)

APPEAL BRIEF TRANSMITTAL FORM

Assistant Commissioner for Patents
Washington, D.C. 20231:

December 28, 2000

Sir:

Transmitted herewith is an Appeal Brief (in triplicate) on behalf of the Appellants in connection with the above-identified application.

☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. 1.8.

A Notice of Appeal was filed on October 18, 2000.

☐ Applicant claims small entity status in accordance with 37 C.F.R. § 1.27

The fee has been calculated as shown below:

☒ Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) - $110.00 - one (1) month (large entity)

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☒ A check in the amount of $420.00 is attached.

☐ Please charge Deposit Account No. 02-2448 in the amount of $0.00. A triplicate copy of this sheet is attached.

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Respectfully submitted,

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IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant:	Kouki HATAKEYAMA		
Application No.:	08/841,318	Group No.:	2712
Filed:	April 30, 1997	Examiner:	A. Harrington

For: A METHOD OF CONTROLLING THE DISPLAY MODE AND THE RECORDING MODE OF AN ELECTRONIC STILL CAMERA (As Amended)

BRIEF ON APPEAL ON BEHALF OF APPELLANTS
FILED UNDER PROVISIONS OF 37 C.F.R. § 1.192

Assistant Commissioner for Patents
Washington, D.C. 20231

December 28, 2000

Dear Sir:

This is an Appeal from the Final Rejection of July 18, 2000 of claims 1-7 and 9. This Appeal Brief is submitted in support of the Notice of Appeal filed on October 18, 2000.

I. REAL PARTY IN INTEREST

The real party in interest in the present Appeal is Fuji Photo Film Co., Ltd.

II. RELATED APPEALS OR INTERFERENCES

Appellant submits that no other appeals or interferences are known to Appellant, Appellant's legal representative, or the Assignee of the present application, which would directly affect or be directly affected by, or have a bearing on the Board's decision in the pending Appeal.

III. STATUS OF THE CLAIMS

Claims 1-7 and 9 are pending in the application. Claims 1, 5, 7, and 9 are independent. A complete copy of pending claims 1-7 and 9 is provided in Appendix A attached hereto.

Claims 1-7 and 9 stand rejected and are the claims on Appeal.

IV. STATUS OF AMENDMENTS

The Reply filed on May 2, 2000 was considered by the Examiner, who issued a Final Office Action on the merits, dated July 18, 2000.

V. SUMMARY OF THE INVENTION

The present application relates to a controlling method for an electronic still camera which picks up image signals through a solid state imaging device such as a CCD image sensor, and records still pictures on a single recording medium such as a memory card or magnetic disk. More particularly, the present application relates to a recording control method for an electronic still camera with has an electronic view finder for displaying a moving picture of a photographic subject.

In conventional electronic still cameras with view finders, when recording a still picture on a recording medium such as a memory card for example, it is desirable to read the signal charges of the individual pixels without combining or adding them (by pixel combination for example), and to record the image signals digitally. This is because the recorded image data is to

be processed for each pixel (such as in a PC to print/merge-print the still picture into a hard copy). Thus, pixel-combined field image signals are inappropriate for recording.

For this reason, the reading format of a solid state image device of the camera (CCD), is switched over between when to pick up field image signals for displaying a moving picture, "movie mode"; and when to pick up field image signals for recording a still picture, or "recording mode". In the recording mode, the electronic view finder of the camera scans the individual pixels sequentially to record an image signal for each pixel on the exemplary memory card for example.

As a result, under the same exposure conditions, the signal levels of the image signals for the still picture drops from those of the pixel-combined field image signals, which are obtained by adding the signal charges of every two pixels. In the move mode, white balance and exposure amount (the charge storage time of the solid state imaging device) are automatically controlled depending on the signal levels of the pixel-combined image signals. If the same exposure values for the movie mode are used for the recording mode, however; the reproduced still pictures have improper low density and insufficient color balance due to the difference in signal level. Further, controlling exposure based on the signal levels of image signals of individual pixels in the recording mode (i.e., after each shutter release) is also undesirable, in that there is too long a lag time between shutter release to actual recording, which may still picture desired to be recorded to shift during the lag time, producing unwanted results.

The preferred embodiment of the present application overcomes these disadvantages, so

that a recorded picture can be recorded at an appropriate signal level in the recording mode, and so that a moving picture can be displayed in real time in the movie mode.

The operation of the electronic still camera of the present application is described with references to Figures 1, 3 and 4. When power to the camera is turned ON, the still camera operates in the movie mode, where the system controller 10 drives a CCD image sensor 2 through the CCD driver 6, on the basis of vertical synchronizing signals generated at a frequency of 1/60 seconds.

In the movie mode, the CCD image sensor 2 is read according to pixel combination. Specifically, the signal charges of each pixel 3 of the even horizontal scanning lines of the CCD are added to a signal charge of an individual pixel 3 which is disposed on the same column, but which is located in the preceding odd horizontal scanning line, thereby providing image signals for a first or odd field. Thereafter, to obtain field image signals of an even field, the signal charge of each pixel of an even horizontal scanning line is added to a signal charge stored in one of those pixels detecting the same color in one of two adjacent odd horizontal scanning lines. Therefore, one feature of the present application is that the types of individual pixels added are different relative to which field is being added (see Figure 2 odd field or even field). Additionally, field image signals of the present application are only produced or added in the movie mode.

Responsive to a shutter release operation, the still camera then begins operating in the recording mode. In the recording mode, the signal charges of the individual pixels 3 are picked

up sequentially from every horizontal scanning line, without being pixel-combined (i.e., without adding values of adjacent pixels 3). Therefore, the charge storage time T2 is twice the latest charge storage time T1 just prior to the shutter release operation. A second feature of the present application is that the signal charges of the individual pixels are read out without being added in the recording mode, so that the signal level is determined in accordance with the level of the field image signal.

Another aspect of the present application is the increasing of the charge storage time when switching between the movie mode and recording mode, so that the second charge storage time in the recording mode is greater than the first charge storage time in the movie mode. Thus the second charge storage time is a function of the first charge storage time. A specific doubling of the charge storage time between modes makes it possible to set the appropriate signal levels of the recording image signals in the same and/or proper range of the field image signals. This allows the setting of the luminance and color balance of the recorded still picture in the same range as the moving picture displayed on the view finder.

The same effect will result from doubling the gains of the amplifier 8 in the recording mode. Doubling the amplifier gain for the recording mode upon a shutter release operation also allows for the setting of luminance and color balance of a recorded still picture to be in the same range as that of a moving picture displayed on the view finder.

VI. ISSUES PRESENTED

A. Whether claims 7 and 9 are rendered unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,847,756 to Iura et al.; and

B. Whether claims 1-6 are rendered unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,847,756 to Iura et al., in view of U.S. Patent No. 4,837,628 to Sasaki and further in view of U.S. Patent No. 4,054,915 to Sugihara.

Prior to presenting the issues, Appellants offer a brief discussion of Iura et al. for the Board's convenience. Iura et al. is the primary reference for both rejections.

Iura et al.

Iura et al. is directed to an image pickup apparatus capable of generating both a motion picture and a still picture. In Iura et al., exposure control is performed by pre-shortening the exposure time for an image sensor device by making use of an electronic shutter function within a motion picture imaging mode, while maintaining a diaphragm between a lens and the sensor at a position closer to the opened state.

In one embodiment, electric charges (i.e., signals) are outputted from individual pixels of the image sensor device, independent from one another in the still picture mode. In the motion picture mode, electric charges from every pair of pixels located adjacent to each other in the vertical direction are mixedly read out on a field-by-field basis (i.e., a two-line mixed read out scheme is utilized in the movie mode, whereas a one-line read out method is utilized in the still picture mode). In a desirable aspect, a greater amount of electric charge can be stored in the image sensor device 103 in the still picture imaging mode, as compared to the motion picture

imaging mode (up to 3x), so that the S/N ratio can correspondingly be improved.

Regarding the still picture pickup mode, Fig. 17 illustrates a timing chart for exposure control. As can be seen in Fig. 17, the exposure control of the motion picture imaging operation (fields 41 and 42) is affected by increasing or decreasing a period TS via the electronic shutter speed control signal 211, while the iris diaphragm 202 is being opened, so that the exposure time in the still picture pickup operation (i.e., during field 43) can be shortened. Further, it appears that in each of the embodiments in Iura et al., a desirable result is when the amount of exposure in the motion picture imaging mode becomes equal to the amount of exposure in the still picture pickup mode. Again, this is done by manipulating an iris control signal 210 and the electronic shutter speed control signal 211 while in the still mode.

Issues presented:

A. Whether claims 7 and 9 are rendered unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,847,756 to Iura et al.

(1) In formulating the rejection of independent claim 7, the Examiner alleges that Iura discloses a video camera (Fig. 2) with motion and still modes of operation including display of motion/still pictures (col. 12, lines 1-18); where a motion picture is interlaced two line additive scanned image data, and the still picture represents a form of interlace scanning, where field outputs of all the even and odd lines forms the still image data (col. 9, lines 1-51). The Examiner also alleges that the still image data level depends on the motion image data in the preceding period, by "setting the exposure period for the still image data to be from 1.5 to 3 times as long as

the motion image compensation period", (col. 4, lines 42-62; col. 5, lines 5-15; col. 14, lines 7-19), which allows luminance and balance of recorded still data to be set in the same range.

(2) Further, the Examiner alleges that exposure time in Iura et al. is done by cooperation with a microcomputer, which "sends shutter control signals to an electronic shutter control circuit". The Examiner additionally alleges that, although it is not disclosed in Iura, it "would have been a matter of common sense, that a storage time calculated/determined (citing col. 20, lines 1-16) by the last electronic shutter signal sent by way of control signal to the shutter control circuit to the CCD is held/stored/memorized (i.e., in a memory) by the microcomputer.

Issue 2

(3) In formulating the rejection of independent claim 9, the Examiner re-states paragraph A(1), and indicates that "Although Iura disclose (sic) changing the exposure in an embodiment. Iura also teaches that when (an) image data level is to be, the gain of an amplifier and/or the exposure time is adjusted (citing col. 3, lines 10-15). The motivation for doubling amplifier gain instead of exposure time is alleged as "to increase the signal."

Issue 3

B. Whether claims 1-6 are rendered unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,847,756 to Iura et al., in view of U.S. Patent No. 4,837,628 to Sasaki and further in view of U.S. Patent No. 4,054,915 to Sugihara.

(1) In formulating the rejection of independent claim 1, the Examiner re-states paragraph A(1) above, presumedly to allege at least that the elements in the preamble are taught, the displaying, detecting, and determining steps of claim 1, and presumedly the displaying, detecting, and revising steps of claim 5. Additionally, the Examiner further states that "As seen in Fig. 10, the still image mode takes at least 1.5 times as long as the movie mode (see col. 14).

Since Iura system (sic) is configured to collect charge that is 1.5 to 3 time (sic) the amount in the movie mode, then clearly the system is capable of doubling the exposure".

(2) The Examiner admits that Iura specifically fails to disclose the claimed "color filter arrangement", alleged interlaced "field shifting" additive readout and outputting pixel data in line sequential scanning (Appellant presumes this to be the two obtaining steps and starting step of claim 1, and the three obtaining steps of claim 5, as well as the references to a plurality of color filters in claim 1 and to the three-vertically-adjacent color separation filters of claim 5).

(3) However, the Examiner indicates that the outputting of pixel data via line sequential scanning is taught by Sasaki's shutter release operation (abstract, col. 6, lines 50-55), where "Sasaki also reads out all the pixel signal in the still image mode also by driving an interline transfer CCD to output each pixel in the array. This driving is equivalent to sequential scanning of each line." The Examiner's motivation for combining Sasaki's shutter release operation with Iura's device is two-fold:

(a) such that a motion/still camera can store selected images from the motion a sequence for user selective/creative use at anytime; and

(b) that the inclusion of either method for reading out pixels (field readout of Iura or line sequential scanning of Sasaki) would be a matter of design choice.

(4) The Examiner admits that although Iura and Sasaki disclose color image systems, neither disclose "an interlaced claimed field shifting method" (Appellant presumes this to be the two "obtaining steps for obtaining the field image signals of the odd and even fields of claims 1 and 5) and claimed plurality of adjacent color separation filters. However, Sugihara is cited to

teach interlace methods of adding field signals (averaging signals of adjacent lines of same color, col. 9, lines 1-14; and adding using the same pair of lines of each field, col. 10, lines 49-67); and of a "stripe color filter". The Examiner's motivation for combining Sugihara's color filter and interlace method(s) with Iura's device and Sasaki's shutter release operation is three-fold:

(a) it (the systems of Sasaki and Iura) does not require any significant upgrade to the processing circuitry that would increase the cost of the system;

(b) is an improved interlaced and color method (presumedly over what is taught, or not taught in Iura and Sasaki);

(c) it would be obvious to use interlace method claimed on a column striped CCD, as Examiner takes Official Notice that interlace scanned CCD with color stripe filters exist in the art), therefore not requiring any significant upgrade to the processing circuitry . . . to implement a color imaging system incorporating a stripe filter to output a picture with good resolution.

(5) As for claims 2-4, the Examiner refers to the discussion in paragraphs B(1)-(4) above rejecting claim 1, as the basis for rejecting these claims. Specifically with respect to claim 4, the Examiner additionally provides essentially the same rationale given for claim 9 in paragraph A(3) above. As for claim 5, the Examiner also refers to the grounds rejecting claim 1, additionally noting that Iura discloses an embodiment where the motion image charge storage time is inherently updated because the CCD has an electronic shutter component (citing col. 15, lines 15-45 and col. 17, lines 1-15). As for claim 6, the Examiner refers to claim 5, and hence claim 1, adding that Iura "gives an example in col. 15, the exposure time of the still is three times as long. However, the exposure range is 1.5 to three times as long which means it could be twice as long."

VII. GROUPING OF CLAIMS

Appellant respectfully requests that the following claims be grouped together as indicated. Group I: claims 1, 2 and 5; Group II: claim 7; Group III, claim 9; Group IV: claim 3; Group V: claim 4.

Appellant respectfully asserts that each of Groups I-V are separately patentable for the reasons set forth below.

VIII. ARGUMENTS

A. Group I (claims 1, 2 and 5)

Appellant initially directs attention to two recent cases decided by the Court of Appeals for the Federal Circuit (CAFC), In re Dembiczak, 50 USPQ2d 1614 (Fed.Cir. 1999) and In re Kotzab, 55 USPQ2d 1313 (Fed.Cir. 2000). Both of these cases set forth very rigorous requirements for establishing a prima facie case of obviousness under 35 U.S.C. §103(a). To establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. The motivation suggestion or teaching may come explicitly from the statements in the prior art, the knowledge of one of ordinary skill art, or in some cases, the nature of the problem to be solved. See Dembiczak 50 USPQ at 1614 (Fed.Cir. 1999). In Kotzab, the CAFC held that even though various elements of the claimed invention were present (in two separate embodiments of the same prior art reference), there was no

motivation to combine the elements from the separate embodiments, based on the teachings in the prior art.

In order to establish a prima facie case of obviousness under 35 U.S.C. §103(a), the Examiner must provide particular findings as to why the two pieces of prior art are combinable. See Dembiczak 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence".

In order to provide motivation for combining Sasaki's shutter release operation with Iura's system, the Examiner asserts:

(a) there is motivation such that a motion/still camera can store selected images from the motion a sequence for user selective/creative use at anytime; and

(b) There is motivation because the inclusion of either method for reading out pixels (field readout of Iura or line sequential scanning of Sasaki) would be a matter of design choice.

Appellant has reviewed the disclosures of Iura and Sasaki several times and do not see where there are explicit statements in the prior art supporting (a) and (b), or where (a) and/or (b) would indicate that one of ordinary skill in art would think to combine Iura with Sasaki. Further, the Examiner has not identified a specific problem to be solved. Accordingly, claims 1, 2 and 5 of Group I are allowable for at least the reason that the Examiner has failed to establish a proper prima facie case of obviousness under 35 U.S.C. 103(a) in view of Dembiczak and Kotzab.

Similarly with respect to Sugihara, in order to provide motivation for combining Sugihara's interlace scanning methods and color stripe filter with Iura's system and Sasaki's system, the Examiner asserts:

(c) it (the systems of Sasaki and Iura) does not require any significant upgrade to the processing circuitry that would increase the cost of the system;

(d) Sugihara's method is an improved interlaced color method (presumedly over what is taught, or not taught in Iura and Sasaki);

(e) no significant upgrade to the processing circuitry is necessary in Iura, Sasaki . . . to implement a color imaging system incorporating a stripe filter of Sugihara to output a picture with good resolution.

Appellant has reviewed the disclosures of Iura, Sasaki and Sugihara several times and do not see where there are explicit statements in the prior art supporting (c) - (e) above, or where (c), (d) and/or (e) would indicate that one of ordinary skill in art would think to combine Iura and Sasaki with Sugihara. Further, the Examiner has not identified a specific problem to be solved. Accordingly, claims 1, 2 and 5 of Group I are allowable for at least the additional reason that the Examiner has failed to establish a proper prima facie case of obviousness in view of Dembiczak and Kotzab.

Notwithstanding the above lack of motivation to combine references, Appellant further submits that in claims 1 and 5 , the first "obtaining" steps of both claims 1 and 5 require that each of the pixels in the even and odd adjacent odd scanning lines must be vertically aligned within the same color separation filter. In the Examiner's rejection, the Examiner indicates that additive interlacing is well known in the art. However, the requirement in claims 1 and 5 is not additive interlacing, but that each of the pixels in the even and adjacent odd scanning lines are vertically aligned within the same color separation filter.

This is a feature that is not taught or suggested by any of Iura et al., Sasaki or Sugihara.

The Examiner admits that Iura is silent on the claimed color filter arrangement, but cites Sugihara to teach of a color camera which has a "stripe color filter" arrangement, and also refers to Sugihara teaching some interlace methods used in color camera. However, nowhere in Sugihara is there a teaching that each of the pixels in the even and odd adjacent odd scanning lines must be vertically aligned within the same color separation filter. Accordingly, claims 1, 2 and 5 of Group I are allowable at least for this additional reason.

In addition, Appellant notes that the Examiner has apparently ignored the claim amendments to the preambles in each of these claims. The preamble is not given the effect of a limitation unless it breathes life and meaning into the claim. In order to limit the claim, the preamble must be "essential to point out the invention defined by the claim." Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In claims directed to articles and apparatus, any phraseology in the preamble that limits the structure of that article or apparatus must be given weight. In re Stencel, 828 F.2d 751, 4 USPQ2d 1071 (Fed. Cir. 1987). Although Appellant's claims are in method form, Appellant submits that case law is agreeable to Appellant's position--that the preambles should be considered.

Claim preambles cannot be ignored, and are considered to limit the scope of the invention if they breathe life and meaning into the claim. *See* Bell Communications Research, Inc. v. Vitalink Communications Corp., 34 USPQ 2d 1816, 1820 (Fed. Cir. 1995). In this respect, each of claims 1 and 5 link the preamble to the body of the claim and thus the limitations directed to horizontal scanning lines in the solid state imaging device of the electronic still camera and/or

individual pixels of these horizontal scanning lines within a particular color filter cannot be ignored.

For example, in claim 5, the preamble recites "...a plurality of adjacent horizontal scanning lines of individual pixels intersected by three vertically-adjacent color separation filters forming columns in the solid-state imaging device, so that individual pixels of a plurality of adjacent horizontal scanning lines within a particular color filter detect a same color, ...". A similar recital is made in the preamble of claim 1. The horizontal scanning lines are referred to several times in the body of claims 1 and 5 with respect to the color filter(s), as are the individual pixels of these scanning lines. Such features regarding the claimed relationship between individual pixel, scanning line and color filter cannot be ignored.

Accordingly, and in view of the above, Appellant submits that the preambles for each of independent claims 1 and 5 breathe life and meaning into the claim, and at least modify the structure of the electronic still camera. Particularly, the solid-state imaging device of the camera in Iura et al. fails to include a plurality of adjacent horizontal scanning lines of individual pixels intersected by a plurality of adjacent color separation filters forming columns in the solid-state imaging device, so that individual pixels of a plurality of adjacent horizontal scanning lines within a particular color filter detect a same color, as claimed in the preamble of claim 1, and somewhat similarly claimed in claim 5.

Further, Appellant submits that, even assuming arguendo that Sasaki and Sugihara could be combined with Iura et al., which Appellant submits they could not, neither of these patents appear to disclose the solid-state imaging device of claims 1 and 5, which "includes a plurality of

(or three) adjacent color filters, each of a distinct color, forming columns in the sold state imaging device so that individual pixels of the plurality of adjacent horizontal scanning lines within a particular color filter detect a same color", as noted above. Sasaki is cited allegedly to teach of sequential scanning. Sugihara is cited to teach of interlace scanning methods and of a "color stripe filter". The recital in claims 1 and 5 is a camera having a solid state imaging device that includes adjacent color separation filters with a particular arrangement within the solid state imaging device and with a particular relationship to pixels of horizontal scanning lines in a filter. Therefore, Appellant submits that the preamble in claims 1 and 5 must be considered, and request the Examiner to distinctly point out the corresponding claimed structure of the solid-state device in the electronic still cameras of Iura et al., Sasaki and/or Sugihara. If these references fail to have the structure to begin with, the rejection is improper at least for this additional reason.

Therefore, in view of the above, withdrawal of the rejections of claims 1, 2 and 5 in Group I is earnestly solicited by Appellant.

B. Group II (claim 7).

Appellant respectfully submits that the Examiner may be misconstruing Iura et al. and its applicability to the present invention. Particularly, Appellant does not see the correlation between Iura et al. with regard to the claimed limitation of determining a second charge storage time by applying a doubling factor to the first charge storage time, as claimed in claim 7.

As noted above in Section VI, Iura et al. is directed to an image pickup apparatus capable of generating both a motion picture and a still picture. In Iura et al., exposure control is

performed by pre-shortening the exposure time for an image sensor device by making use of an electronic shutter function within a motion picture imaging mode, while maintaining a diaphragm between a lens and the sensor at a position closer to the opened state.

As can be seen in Fig. 17 of Iura et al., the exposure control of the motion picture imaging operation (fields 41 and 42) is affected by increasing or decreasing a period TS via the electronic shutter speed control signal 211, while the iris diaphragm 202 is being opened, so that the exposure time in the still picture pickup operation (i.e., during field 43) can be shortened. Further, it appears that in each of the embodiments in Iura et al., a desirable result is when the amount of exposure in the motion picture imaging mode becomes equal to the amount of exposure in the still picture pickup mode. Again, this is done by manipulating an iris control signal 210 and the electronic shutter speed control signal 211 while in the still mode.

Thus, it appears that what is desired in Iura is to shorten the exposure time in the still mode (i.e., after shutter release) such that the amount of exposure in the still mode equals the movie mode. Moreover, Iura et al. says nothing about utilizing any kind of multiplication (doubling) factor for a charge storage time, depending on whether the camera is in the movie mode or still mode.

Particularly the cited columns in Iura et al. do not describe manipulating charge storage time, but rather the amount of exposure. For example, with regard to Fig. 10 and the specification at column 14, lines 8-20 in Iura et al., the Examiner cites a passage which indicates that the amount of exposure in the still picture pickup mode, as represented by the area B shown

in Fig. 10, is 1.5 times as large as that of the exposure in the motion picture imaging mode (area A shown in Fig. 10).

In other words, the amount of exposure during the time period from time T_3 to T_4 is insured to be 1.5 times as large as that of the exposure in the previous mode. More importantly, this passage, as well as each of the other passages cited by the Examiner, is reflective only of increasing these charge storage amounts in the still mode, and not of utilizing a specific doubling factor to modify charge storage times during the movie mode and recording mode, as claimed in claim 7. In any respect, Appellant asserts that Iura's method of shortening exposure time by increasing an exposure amount in a recording mode, which is what is going on in Iura et al., is not and cannot in any regard be analogous to doubling charge storage time in a recording mode by use of a specified doubling factor.

Finally, Appellant has respectfully requested the Examiner to explicitly point out where the utilization of a specific doubling factor to double the charge storage time between movie and recording modes is taught or suggested by Iura et al. The Examiner repeats the allegation that such is taught by relying on the cited disclosure of a charge storage amount in the recording mode being between 1.5 to 3 times that of the movie mode. Amount is not time. Appellant submits that the rejection is improper at least for this additional reason and request withdrawal of the rejection as pertaining to claim 7. Accordingly, for at least the above reasons, Appellant respectfully submits that independent claim 7 is allowable.

C. Group III (claim 9)

In formulating the rejection of independent claim 9, the Examiner indicates that "Although Iura disclose (sic) changing the exposure in an embodiment. Iura also teaches that when (an) image data level is to be, the gain of an amplifier and/or the exposure time is adjusted (citing col. 3, lines 10-15). The Examiner indicates it would be obvious to double the gain instead of the exposure time to "increase the signal". What signal is being spoken of? It is unclear what motivation the Examiner is referring to, or more correctly what is the source of the Examiner's motivation to replace doubling the CST with doubling the gain (i.e., whether the motivation comes from Iura et al. itself, from the level of ordinary skill, or any other evidentiary finding which has yet to be offered by the Examiner.

Accordingly, Appellant submits that the Examiner has not particularly identified any suggestion, teaching or motivation present in Iura et al., and has not included specific or inferential findings concerning identification of relevant art, level of ordinary skill in the art, nature of problem to be solved, or any other factual findings that might support a proper obviousness analysis. Dembiczak, 50 USPQ2d at 1618. In order to establish a prima facie case of obviousness under 35 U.S.C. §103(a), the Examiner must provide particular findings as to why the two pieces of prior art are combinable. See Dembiczak 50 USPQ2d at 1617. Broad conclusory statements such as "to increase the signal", standing alone, are not "evidence". Accordingly, claim 9 of Group III is allowable for at least the reason that the Examiner has failed to establish a proper prima facie case of obviousness under 35 U.S.C. 103(a) in view of Dembiczak and Kotzab, discussed above

and equally relevant.

Further, Appellant also does not see the correlation between Iura et al. with regard to the claimed limitation of setting a second gain of the amplifier in the recording mode by applying a doubling factor to said first set gain, the increase in gain allowing for luminance and balance of a recorded still picture to be set in the same range as a moving picture displayed on an electronic view finder of the still camera. as claimed in claim 9.

As discussed above regarding claim 7, exposure control in Iura et al. is effected by increasing or decreasing a period TS via the electronic shutter speed control signal 211, while the iris diaphragm 202 is being opened, so that the exposure time in the still picture pickup operation (i.e., during field 43) can be shortened. Iura et al. says nothing about utilizing any kind of multiplication (doubling) factor for setting a gain of an amplifier, depending on whether the camera is in the movie mode or still mode. Moreover, the cited passage (col. 3, lines 10-15) describes "increasing a signal amplification factor" to compensate for a decrease in the amount of exposure brought about by shortened charge storage time, yet there is no further discussion of what this amplification factor is. It is not even clear what relevance this has to the exact claimed limitation of claim 9, that is of "setting a second gain of the amplifier in the recording mode by applying a doubling factor to said first set gain". Accordingly, since this feature is not taught in Iura et al., claim 9 of Group III is submitted to be allowable.

D. Group IV (claims 3 and 6).

Dependent claim 3, depending from claim 1 via claim 2, is allowable for at least the

reasons previously presented regarding claim 1. Further, claim 3 recites that "the solid state device is driven with a charge storage time . . . the charge storage time being twice as long as a charge storage time that is used for the field signals immediately before shutter the release operation."

The Examiner relies on the same alleged teaching (Fig. 10 and col. 14) used to reject claim 1, which indicates that the amount of exposure in the still picture pickup mode, as represented by the area B shown in Fig. 10, is 1.5 times as large as that of the exposure in the motion picture imaging mode (area A shown in Fig. 10).

In other words, the amount of exposure during the time period from time T_3 to T_4 is insured to be 1.5 times as large as that of the exposure in the previous mode. Again, this is reflective only of increasing these charge storage amounts in the still mode, and not of utilizing a charge storage time to drive a solid state device, the charge storage time being twice as long as a charge storage time that is used for the field signals immediately before shutter release, as is claimed in claim 3.

Dependent claim 6, depending from claim 5 but similar to claim 3, is allowable for the reasons previously presented regarding claims 3 and 5. For at least the above reasons, Appellant respectfully submit that dependent claims 3 and 6 in Group IV are allowable.

E. Group V (claim 4).

Dependent claim 4, depending from claim 1 via claim 2, is allowable for at least the reasons previously presented regarding claim 1. Further, claim 4 recites that the "gain of the

amplifier for each color is doubled for the image signals to record, compared with that used for the field image signals immediately before the shutter release operation."

The Examiner relies on the same alleged teaching used to reject claim 9. The cited passage (col. 3, lines 10-15) recites "increasing a signal amplification factor" to compensate for a decrease in the amount of exposure brought about by shortened charge storage time, yet there is no further discussion of what this amplification factor is. It is not even clear what relevance this has to the exact claimed limitation of claim 9, that is of "setting a second gain of the amplifier in the recording mode by applying a doubling factor to said first set gain".

Accordingly, the reasons why the Examiner's rejection with respect to this claim fails is similar to the reasons given for claim 9, supra; thus they are not repeated in detail here. Appellant respectfully submits that dependent claim 4 in Group V is allowable.

Conclusion

For the reasons advanced above, it is respectfully submitted that all the claims in the application are allowable. Thus, favorable reconsideration and reversal of the Examiner's rejection of claims 1-7 and 9 by the Honorable Board of Patent Appeals and Interferences, is respectfully requested.

Should there be any outstanding matters which need to be resolved in the present application, the Board is respectfully requested to contact Matthew J. Lattig, Registration No. 45,274 at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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ATTACHED: APPENDIX of CLAIMS

APPENDIX OF CLAIMS

1. A method of controlling an electronic still camera having a solid state imaging device including a plurality of adjacent horizontal scanning lines of individual pixels intersected by a plurality of adjacent color filters, each of a distinct color, forming columns in the solid state imaging device so that individual pixels of the plurality of adjacent horizontal scanning lines within a particular color filter detect a same color, an electronic view finder for displaying a moving picture of a photographic subject by interlace-scanning, and a recording device for recording a still picture of the photographic subject as digital data on a recording medium in response to a shutter release operation, comprising:

obtaining field image signals of an odd field by adding a signal charge stored in each of those pixels aligned in even horizontal scanning lines to a signal charge stored in one of those pixels detecting the same color in one of two adjacent odd horizontal scanning lines, each of those pixels in the even and adjacent odd scanning lines vertically aligned within the same color filter;

obtaining field image signals of an even field by adding the signal charge of each pixel of the even horizontal scanning lines to a signal charge stored in one of those pixels detecting the same color in the other of two adjacent odd horizontal scanning lines;

displaying a frame of the moving picture based on the field image signals for the odd and even fields;

detecting signal levels of the field image signals;

starting, in response to the shutter release operation, to read signal charges stored in the individual pixels by sequential scanning each horizontal scanning line, to provide image

signals of one frame to record; and

determining signal levels of the image signals to record based on the signal levels of the field image signals.

2. A method according to claim 1, wherein the signal levels of the image signals to record are controlled by changing exposure value or gain of an amplifier connected to the output of a solid state device.

3. A method according to claim 2, wherein the solid state device is driven with a charge storage time for obtaining the signals to record, the charge storage time being twice as long as a charge storage time that is used for the field image signals immediately before the shutter release operation.

4. A method according to claim 2, wherein the gain of the amplifier for each color is doubled for the image signals to record, compared with that used for the field image signals immediately before the shutter release operation.

5. A method of controlling an electronic still camera having a solid state imaging device including a plurality of adjacent horizontal scanning lines of individual pixels intersected by three vertically-adjacent color separation filters forming columns in the solid state imaging device so that individual pixels of the plurality of adjacent horizontal scanning lines within a particular color filter detect a same color, an electronic view finder for displaying a moving picture of a photographic subject, and a recording device for

recording a still picture of the photographic subject as digital data on a recording medium in response to a shutter release operation, comprising:

driving the solid state imaging device at a first interval corresponding to a predetermined field frequency of interlace-scanning used for displaying the moving picture;

determining a first charge storage time of the solid state imaging device in a range not more than the first interval;

obtaining field image signals of an odd field by adding a signal charge stored during the first charge storage time in each of those pixels aligned in even horizontal scanning lines to a signal charge stored in one of those pixels detecting the same color in one of two adjacent odd horizontal scanning lines, each of those pixels in the even and adjacent odd scanning lines vertically aligned within the same color separation filter;

obtaining field image signals of an even field by adding the signal charge of each pixel of the even horizontal scanning lines to a signal charge stored in one of those pixels detecting the same color in the other of two adjacent odd horizontal scanning lines;

displaying a frame of the moving picture based on the field image signals for the odd and even fields by interlace-scanning;

detecting signal levels of the field image signals;

revising the first charge storage time in accordance with the detected signal levels;

determining, in response to the shutter release operation, a second charge storage time based on the first charge storage time;

obtaining image signals for one frame from signal charges stored during the second charge storage time in the individual pixels of the solid state imaging device by sequential scanning of each horizontal scanning line; and

recording the image signals of one frame as a still picture in the recording medium.

6. A method according to claim 5, wherein the second charge storage time is twice as long as the first charge storage time.

7. A method of controlling an electronic still camera, comprising:

determining a first charge storage time for a movie mode, said first charge storage time stored in memory;

sending the first charge storage time to a solid state imaging device in the movie mode;

shifting the camera from the movie mode to a recording mode;

determining a second charge storage time by applying a doubling factor to said stored first charge storage time; and

sending the second charge storage time to the solid state imaging device in the recording mode, thereby allowing for luminance and balance of a recorded still picture to be set in the same range as a moving picture displayed on an electronic view finder of the still camera.

9. A method of controlling an electronic still camera, comprising:

sending field image signals having signal levels from an output of a solid state imaging device to an amplifier set at a first gain in an initial movie mode;

shifting the camera from the movie mode to a recording mode; and

setting a second gain of the amplifier in the recording mode by applying a doubling factor to said first set gain, the increase in gain allowing for luminance and balance of a recorded still picture to be set in the same range as a moving picture displayed on an electronic view finder of the still camera.